REMARKS

This amendment is in response to the Office Action of November 13, 2007 in which claims 1-17 were rejected.

The applicant has amended the independent claims to reduce the preambles. Independent claims 1 and 10 remain system claims. Claims 11-15 have been cancelled and new claims 18-40 added. The remaining independent claims and their dependent claims have been amended to become "single-actor" claims so as to cover one or the other of the network elements of the system or the methods performed by such elements (the added claims are similarly "single-actor" claims).

Claim objections

The reference numbers as well as proper nouns and acronyms have been removed from the claims.

Also, wording "*characterized in that*" have been removed from all the claims.

Withdrawal of the objections is requested.

This amendment is submitted with an extra claims fee of $1,380.00 to pay for a total of thirty-five claims (15 extra total at $50 each) including six independent claims (three extra at $210 each). If this fee is excessive or insufficient or missing, the Commissioner is authorized to credit or deduct the excess or shortfall to or from our Deposit Account Number 23-0442. This amendment is submitted with a petition for a three month extension of time along with a fee of $1,050.00 therefor. If the petition is for the wrong period of extension or if the petition is missing, the Commissioner is authorized to consider this paper as a petition for the correct extension of time. If the enclosed extension fee is excessive or insufficient or missing, the Commissioner is likewise authorized to credit or deduct the excess or shortfall to or from our Deposit Account Number 23-0442.

ARGUMENTATION

The Office Action rejected all the claims on the grounds of following documents:

D1) WO01/58085 A1
D2) US 6,937,566 B1
D3) US 2002/0114279 A1

Claim rejections under 35 U.S.C. § 103(a):

The applicant will now briefly explain in detail below the salient points taken from the disclosures of the D1-D3 references and will show why the D1-D3 references are inapplicable as 35 U.S.C. 103 references.

D1 relates to distributing a signal to several base transceiver stations (BTSs), wherein the base station system (BSS) incorporates an Internet Protocol network including a plurality of routers, which are capable of utilizing a multicast address within a signal to direct the call towards one of the BTSs and which are also capable of utilizing the multicast address within the signal to make and direct the copy of the signal towards another one of the BTSs.

In D1 the telecommunications system (200) includes a packet switched network (120) comprising a serving general packet radio service support node (SGSN, 120) and the BSS (250). The packet switched network transmits or receives packet switched data from and to the BSS through the SGSN via a Gb interface.

The BSS supports an IP protocol, which enables a sending source to address several destinations using one address in the packet address field of the signal (e.g. multicast transmission). Each router (292) can use a multicast address in the signal sent from the sending source to direct that signal or copy of that signal towards the appropriate

BTSs (page 3 lines 2-8, p. 3 line 26 – p. 4 line 19, p. 5 line 30 – p. 6 line 14, figure 2).

The method according independent claim 1 discloses a method for routing the service data of the MBMS from a first network entity to a second network entity.

The method of claim 1 (as amended) comprises the following features (F1)-(F3):

> (F1) defining a packet flow identifier associated to at least one multicast/broadcast multimedia service or a group of terminals,
>
> (F2) creating a packet flow context for said multicast/broadcast multimedia service or group of terminals identified by said packet flow identifier, and
>
> (F3) transferring service data of the multicast/broadcast multimedia service over a Gb interface by utilizing said packet flow context for routing the service data of the multicast/broadcast multimedia service from a first network entity to a second network entity.

D1 can be thought to reveal the data routing from the first entity (SGSN) to the second entity (BBS) and the feature of transferring the data over the Gb interface.

However, D1 is silent on defining a PFI associated to at least one MBMS or a group of terminals (feature F1), creating a PFC for said MBMS or group of terminals identified by said PFI (feature F2), and transferring the service data of the MBMS over a Gb interface by utilizing said PFC (feature F3).

So, it is clear that D1 does not disclose independent claim 1 either prior to the above amendment or as currently amended as shown below:

" *Method comprising ~~for routing service data of a Multicast/Broadcast Multimedia Service (MBMS) from a first network entity (120) to a second network entity (130), characterized in that said method has the steps of~~*

defining a packet flow identifier ~~(PFI)~~ associated to at least one multicast/broadcast multimedia service ~~MBMS~~ or a group of terminals ~~(804)~~,

creating a packet flow context ~~(PFC)~~ for said multicast/broadcast multimedia service ~~MBMS~~ or group of terminals identified by said packet flow identifier ~~(806)~~,

transferring the service data of the multicast/broadcast multimedia service ~~MBMS~~ over a gb ~~Gb~~ interface by utilizing said packet flow context ~~PFC (812)~~ for routing the service data of a multicast/broadcast multimedia service from a first network entity to a second network entity."

D2 relates to a dynamic quality of service (QoS) reservation in a mobile communication network, wherein a BSS comprising a base station controller (BSC) and one or more base stations (BSs), which BSS is connected to a General Packet Radio Service (GPRS) network at an SGSN delivering packets to mobile stations within its service area.

Next, the procedures for providing a dynamic QoS and a PDP (Packet Data Protocol) context activation are described by figures 5 and 6 of D2.

Figure 5 illustrates procedures for providing a dynamic QoS in the GPRS network in this detailed example embodiment (110). The first set of procedures relate to the PDP context activation (112), wherein the PDP corresponds to the network layer protocol used in the data communications system. Another way of describing the PDP context is that the mobile host (12) has "logged-on" and started a data session with GPRS.

In GPRS, there are two example PDPs that may be used including Internet Protocol (IP) v4 and X.25. IP is assumed for purposes of the following example. In figure 2 the Home Location Register (HLR, 42) stores PDP contexts for each mobile subscriber in corresponding subscription records. The PDP subscription record includes subscribed quality of service profiles/parameters, subscribed external networks, etc. When a mobile system "attaches" to the GPRS network, the mobile

host's subscription is retrieved from the HLR. As a result of PDP context activation, a network layer "bearer" or tunnel is established between the mobile host and the gateway GPRS support node (GGSN, 54).

After the PDP context activation, a network layer, e.g. the IP, host configuration operation (114) is performed to establish a network layer (IP) bearer communication between the mobile host and an Internet Service Provider (ISP, 58). The IP configuration includes assigning a network layer (IP) address to the mobile host, setting default values for a World Wide Web (WWW) server, a domain name server (DNS), an address resolution protocol (ARP) cache, etc. The IP bearer between the mobile host and the GGSN established in PDP context activation is now extended from the GGSN to the ISP. Packets can be routed back and forth between the mobile host and end-systems at the ISP.

The next step is the QoS reservation, in which a specific QoS is reserved for each application flow established during the activated PDP context/data session (116). A number of procedures are performed to ensure that there is sufficient capacity for the requested QoS reservation and that the requesting mobile host is authorized to request reservation of the particular quality of service.

The final step relates to the forwarding of the IP data packets between the external host, such as the ISP, and the mobile host (118). Such IP packet forwarding includes a packet classifying, scheduling/queuing, and policing procedures.

In figure 6 is illustrated a signaling sequence for the PDP context activation. Each vertical line in the figure represents a node illustrated in figure 2 including the mobile host (host/MS), SGSN, GGSN, and ISP. The mobile host sends an "activate PDP context request" message to the SGSN which includes an access point name (APN), i.e., the name of the ISP, a PDP type (e.g. the IP), a QoS definition for this PDP context request itself (e.g. QoS class 4 Best Efforts (BE)), and an end-to-end configuration request. Rather than requesting an IP address, the mobile host sends

the end-to-end configuration request parameter to request a dynamic PDP address allocation after the PDP context has been established.

Upon receiving the activate PDP context request message from the mobile host, the SGSN checks the mobile's subscription in the HLR to determine whether the mobile host subscribes to a static or dynamic QoS reservation. In static QoS reservation, all application flows receive the QoS established for the PDP context/data session. In dynamic QoS reservation, a QoS may be specified for individual application flows. In this example the dynamic QoS reservation subscription is assumed. The access point name is translated to a GGSN address using the domain name system (DNS), i.e., the on-line distributed database system used to map human-readable machine names into IP addresses. In addition, a tunnel identifier (TID) is created for purposes of establishing a tunnel bearer between the GGSN and the mobile host. The SGSN sends to the GGSN a "create PDP context request" message along with the APN, PDP type, QoS, TID, and end-to-end configuration request.

The GGSN functions as a dynamic host configuration protocol (DHCP) relay agent. DHCP is a protocol for allocating IP addresses to users. The allocation of the IP address is performed by a DHCP server, which in this example is the ISP, and the mobile host is the DHCP client. The GGSN also performs the translation of the access point name to the ISP address via the DNS, and allocates a DHCP relay to the PDP request. Again, no IP address is yet allocated to the mobile host. The GGSN sends a "create PDP context response" message back to the SGSN which includes the tunnel identifier (TID) and an end-to-end configuration confirmation using a best efforts QoS. The GGSN, functioning as the DHCP relay, selects a predefined tunnel or bearer for the selected access point name. The SGSN then sends an "activate PDP context accept" message to the mobile host. At this point, the logical tunnel/bearer is essentially open for packet traffic between the mobile host and the ISP, but only as IP broadcast messages because the mobile host is not addressable on network (IP) layer. Application flows transmitted via that logical link may have any one of the subscribed to QoS parameters/classes (column 8 line 4 – column 9 line 38).

As one can see from the above, D2 fails to indicate explicitly, or even implicitly, the features of defining a PFI associated to at least one MBMS or a group of terminals (feature F1), creating a PFC for said MBMS or group of terminals identified by said PFI (feature F2), and transferring the service data of the MBMS over a Gb interface by utilizing said PFC (feature F3).

Thus, D2 does not disclose independent claim 1.

In addition, there is no hint in D1 or D2 to combine these documents in order to achieve the method according to independent claim 1. D1 relates to the distributing a signal to several BTSs and D2, for one, the QoS reservation in a mobile communication network, so, it would not be meaningful to combine the documents with each other.

Even if the teachings of D2 are combined with the teachings of D1, the combination would be silent of defining a PFI associated to at least one MBMS or a group of terminals (feature F1), creating a PFC for said MBMS or group of terminals identified by said PFI (feature F2), and transferring the service data of the MBMS over a Gb interface by utilizing said PFC (feature F3).

Therefore, the combination of D1 and D2 does not disclose the method according to independent claim 1 and a *prima facie* case of obviousness has not been made. The same may be said for independent claim 10, which is the system counterpart to claim 1.

A similar analysis is made for the other independent (single-actor) claims rejected on this ground. E.g., the combination of D1 and D2 fails to show or suggest, as in claims 17 and 34, the feature F1(defining a packet flow identifier associated to at least one multicast/broadcast multimedia service or a group of terminals), the sending of a message to create a packet flow context for said multicast/broadcast multimedia service or group of terminals identified by said packet flow identifier, and feature F3 (transferring service data of the multicast/broadcast multimedia

service over a Gb interface by utilizing said packet flow context for routing the service data of said multicast/broadcast multimedia service over the Gb interface). Their dependent claims rejected on the same ground are patentably nonobvious for at least the same reasons. A similar statement applies to independent single-actor claims 22 and 29 and their dependent claims. Withdrawal of the obviousness rejection of claims 1, 5-10 and 13-17 is requested.

Regarding the separate obviousness rejection of claims 3-4 and 11-12, D3 relates to a data flow controlling in a telecommunications system, wherein a base station (BS) communicates with a mobile station (MS) using plurality of packet data flows having respective data flow rates. The data flows through a network are controlled by controlling the data flow rate of each packet data flow, an overall data flow rate to the MS, and a data flow rate for each BS.

In figure 3 of D3 a data for a specific packet flow context (PFC) belonging to a MS that is located in a BSSGP virtual connection (BVC) is sent from a SGSN to a BSS. The BSS may control the data flow per a BSSGP virtual connection identifier (BVCI), individual MS, and also per individual PFC for the MS. The additional flow control indication per PFC for each MS may for example be included in one of the existing flow control messages per BVCI or per MS, or it may construct a new message that is sent between the BSS and the SGSN. The PFC flow control information may consist of for example a PFC bucket size, PFC bucket leak rate, and PFC bucket full ratio. PFCs of the same type to one mobile station may be controlled together.

The data flow controlling of D3 differentiates data flows with different QoS levels for the same MS. Each data flow for each MS is treated separately according to its QoS in the BSS (abstract, paragraphs [0022]-[0023]).

Also in this case, D3 fails to indicate explicitly or implicitly the features of defining a PFI associated to at least one MBMS or a group of terminals (feature F1), creating a PFC for said MBMS or group of terminals identified by said PFI (feature F2), and

transferring the service data of the MBMS over a Gb interface by utilizing said PFC (feature F3).

Furthermore, D3 fails to show or suggest performance of flow control of the service data of the multicast/broadcast multimedia service on packet flow context and base station system general packet radio service protocol virtual connection levels or performance thereof on a level located between the packet flow context and base station system general packet radio service protocol virtual connection levels, the level comprising at least one block whereto at least one packet flow context is logically connected

Consequently, D3 does not disclose independent claim 1 or the features of its dependent claims 3-4.

Besides, there is no hint in D1, D2 or D3 to combine these documents for achieving the method according to independent claim 1 or 3-4.

Even if the teachings of D3 are combined with the teachings of D1 and D2, "the combination" would be silent on defining a PFI associated to at least one MBMS or a group of terminals (feature F1), creating a PFC for said MBMS or group of terminals identified by said PFI (feature F2), and transferring the service data of the MBMS over a Gb interface by utilizing said PFC (feature F3).

Therefore, the combination of D1, D2 and D3 does not disclose the method according to independent claim 1 or its dependent claims 3-4.

The applicant believes that the reasons advanced above as to why the applied references D1-D3 do not show or suggest the service data routing method of the independent claims are now explained to a degree sufficient to persuade the Examiner that all of the claims are in condition for allowance.

If the applicant's argumentation does not lead to immediate allowance, the applicant respectfully asks that the Examiner indicate exactly the details from documents D1-D3 that create the basis for any continued rejection.

The objections and rejections of the Office Action of November 13, 2007, having been obviated by amendment or shown to be inapplicable, withdrawal thereof is requested and passage of claims 1-10 and 16-38 to issue is earnestly solicited.

Respectfully submitted,

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